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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/928,828	08/13/2001	Richard Kenneth McGuire	GB9 -2000 -0098 US1	8100
27085	7590	06/25/2004	EXAMINER	
IBM CORPORATION LOTUS SOFTWARE ONE ROGERS STREET CAMBRIDGE, MA 02142			NGUYEN BA, HOANG VU A	
			ART UNIT	PAPER NUMBER
			2122	

DATE MAILED: 06/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	09/928,828		MCGUIRE, RICHARD KENNETH	
	Examiner		Art Unit	
	Hoang-Vu A Nguyen-Ba		2122	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 August 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>10/15/01</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is responsive to application filed August 13, 2001.
2. Claims 1-24 have been examined.

Drawings

3. The drawings filed August 9, 2001 are approved by the examiner.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1, 9, 15, 16, 17, 23 and 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 (line 12), 9 (line 12) and 17 (line 14) recite the limitation "the constant pool entry." There is insufficient antecedent basis for this limitation in the claim.

6. Claims 15 (line 2), 16 (lines 2, 3-5), 23 (line 2) and 24 (lines 2-5) contain the trademark/trade name "a Java virtual machine," "shared Java virtual machine," "one Java virtual machine," "another Java virtual machine." Where a trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of 35 U.S.C. 112, second paragraph. See *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product. A trademark or trade name is used to identify a source

of goods, and not the goods themselves. Thus, a trademark or trade name does not identify or describe the goods associated with the trademark or trade name. In the present case, the trademark/trade name is used to identify/describe the "Java™ Virtual Machine," a product of Sun Microsystems, Inc. in Mountain View, California and, accordingly, the identification/description is indefinite.

Claim Rejections - 35 USC § 101

7. 35 U.S.C. § 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

8. The invention as disclosed in claims 9-16 are directed to non-statutory subject matter. While the claims are in the technological arts, they are not limited to "a practical application of an abstract idea which produced a useful, concrete, and tangible result." State Street Bank & Trust v. Signature Financial Group, Inc., 149 F. 3d 1368, 1375 n. 9 (Fed. Cir. 1998).

Specifically, claim 9 is directed to a computer system having one or more program classes loaded therein and further comprising a constant pool and means for performing a resolution on data items in the constant pool. This computer system can be interpreted to be a system of software components, e.g., software program per se. Thus, Applicants fail to disclose that these software components are tangibly embodied and executed by a piece of hardware and that their functions have practical applications which produce useful, concrete, and tangible results under the State Street Formulation.

On this basis, claims 9 and 10-16, which depend from claim 9, are rejected under 35 U.S.C. § 101.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1-7, 9-15 and 17-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,338,160 to Patel et al. ("Patel").

Claims 1, 9 and 17

Patel discloses at least:

providing a constant pool for storing data items related to a program class (see at least Figure 8, step 124 and related discussion in the specification);

performing a resolution on at least some of the data items in the constant pool, said resolution transforming a data item from an unresolved value as loaded to a resolved value such that the data item can be utilised by a program (see at least Figure 8, steps 126-138 and related discussion in the specification).

Patel does not specifically disclose *maintaining both the unresolved value and the resolved value in the constant pool entry for a resolved data item*. However, Patel teaches that there can be different jump tables and instructions regions for each specific bytecode instruction referencing the constant pool (8:48-51). It would have been obvious to a

person having ordinary skill in the art at the time the invention was made to use the above feature of Patel to jump to another table in order to concurrently resolve the same constant pool entry by another thread rather than using the lock mechanism.

Claims 2, 10 and 18

The rejection of base claims 1, 9, 17 is incorporated. Patel further discloses *setting a resolution flag for a data item after that data item has been resolved* (see at least Figure 10, item 180a and related discussion in the specification).

Claims 6, 14 and 22

The rejection of base claims 1, 9, 17 and intervening claims 2, 10, 18 is incorporated. Patel further disclose *wherein a data item within a constant pool has as its unresolved value an index to the name of a class* (8:18-51).

Patel does not specifically disclose *said method further comprises the step of always accessing said unresolved value to obtain the class name, irrespective of whether said resolution flag has been set*. However, Patel teaches that there can be different jump tables and instructions regions for each specific bytecode instruction referencing the constant pool (8:48-51). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the above feature of Patel by means of additional instructional code so that the program will jump to another table to get the resolved value. The modification would prevent the use of lock mechanism, which will add overhead to the runtime process.

Claims 3, 11 and 19

The rejection of base claims 1, 9, 17 is incorporated. Patel does not specifically disclose *wherein the step of performing a resolution for a data item comprises the steps of: retrieving*

the unresolved value of the data item; determining the resolved value of the data item; and writing the resolved value of the data item into the constant pool, whilst still maintaining the unresolved value of the data item in the constant pool. However, Patel teaches that there can be different jump tables and instructions regions for each specific bytecode instruction referencing the constant pool (8:48-51). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to use the above feature of Patel to jump to another table in order to concurrently resolve the same constant pool entry by another thread rather than using the lock mechanism.

Claims 4, 12 and 20

The rejection of base claims 1, 9, 17 and intervening claims 3, 11, 19 is incorporated. Patel does not specifically disclose *wherein the steps of retrieving, determining and writing are performed without locking the constant pool or any component thereof.* However, Patel teaches that there can be different jump tables and instructions regions for each specific bytecode instruction referencing the constant pool (8:48-51). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to use the above feature of Patel to jump to another table in order to concurrently resolve the same constant pool entry by another thread rather than using the lock mechanism.

Claims 5, 13 and 21

The rejection of base claims 1, 9, 17 and intervening claims 3, 11, 19 is incorporated. Patel further discloses *wherein the step of performing a resolution for a data item further comprises the step of setting a resolution flag for a data item after the resolved value of that data item has been written into the constant pool* (see at least Figure 10, item 180a and related discussion in the specification).

Claims 7, 15 and 23

The rejection of base claims 1, 9, 17 is incorporated. Patel further discloses *wherein said program classes are loaded into a Java virtual machine which includes said constant pool* (see at least 7:40 - 8:17).

11. Claims 8, 16 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,338,160 to Patel et al. ("Patel"), as applied to the above claims, in view of U.S. Patent No. 6,374,286 to Gee et al. ("Gee").

Claims 8, 16 and 24

The rejection of base claims 1, 9, 17 and intervening claims 7, 15, 23 is incorporated. Patel does not specifically disclose *wherein the computer system supports a configuration of shared Java virtual machines, such that data items in the constant pool in one Java virtual machine can be resolved in response to processing in another Java virtual machine*. However, Gee teaches a processor capable of concurrently running multiple independent Java™ machines using context-switching technique (Abstract). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to use Gee technique in Patel so that Patel can be implemented for a multiple Java™ Virtual Machine environment.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoang-Vu "Antony" Nguyen-Ba whose telephone number is (703) 305-0103. The examiner can normally be reached on 6:00 - 16:15.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Dam can be reached on (703) 305-4552. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



ANTONY NGUYEN-BA
PRIMARY EXAMINER

Art Unit 2122

June 23, 2004